# autophagy

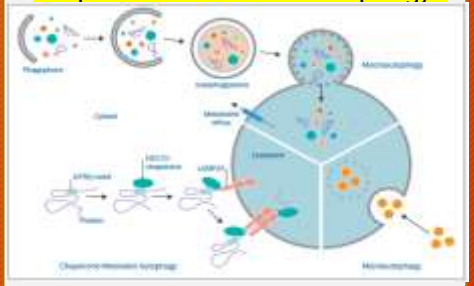
Anas Salem Elhouni, 3rd year medical student
Faculty Of Basic Medical Science, Libyan International Medical University

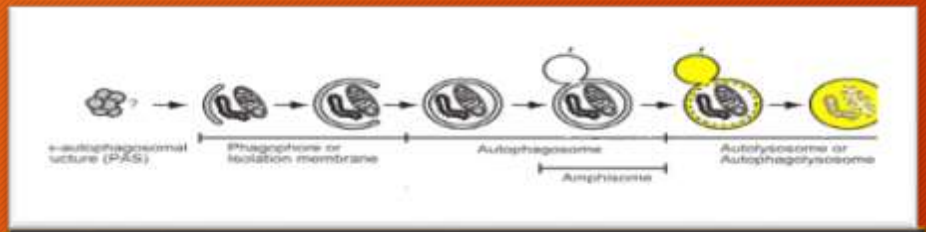
## INTRODUCTION

Autophagy is an intracellular degradation system that delivers cytoplasmic constituents to the lysosome. Despite its simplicity, recent progress has demonstrated that autophagy plays a wide variety of physiological and pathophysiological roles[1] which will be briefly discussed later.

## TYPES

three types autophagy [1]
1-macroautophag
2-Microautophagy
3-chaperone-mediated autophagy






## PROCESS

**1-Induction of autophagy:.** lack of any type of essential nutrient and it differs depending on the tissue
**2-Autophagosome formation:.** cytoplasmic constituents, including organelles, are sequestered by a unique membrane called the phagophore, Complete sequestration by the elongating phagophore results in formation of the autophagosome
**3-degradation :.** In the next step, autophagosomes fuse with lysosomes the cytoplasm-derived materials contained in the autophagosome are then degraded by lysosomal hydrolases.
**4-reuse:.** monomeric units (e.g., amino acids) are exported to the cytosol for reuse.[2]

**Regulation:.** Recent studies showed that the main regulator is the endocrine system (insulin-glucagon) [2]

**Genes: (APG, AUT, CVT, GSA, PAG, PAZ, and PDD). Or commonly known as ATG**[2]

## FUNCTIONS

Recent studies in this field showed that autophagy has a lot of functions in our bodies including:.
1-Nutrient starvation
2-Repair mechanism
3-Cancer
4-neurodegertive diseases [2]

## CONCLUSION

Autophagy is a process in which martials are recycled in our body,and it has many functions that achieve metabolic balance

## REFERENCES

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